

Claims.

1. A process for manufacturing a catalyst which comprises a cobalt species on a titania support, comprising mixing together said titania support and an aqueous solution of cobalt ammine carbonate, and heating to a temperature in the range 60 to 110°C to effect decomposition of the cobalt ammine carbonate and precipitation of an insoluble cobalt compound onto said titania support.
2. A process as claimed in claim 1, comprising saturating a titania support with an aqueous solution of cobalt ammine carbonate, and removing the excess of the solution, before heating the resulting product to a temperature sufficient to effect decomposition of the cobalt ammine carbonate.
3. A process as claimed in claim 1, wherein the mixture of titania support and said cobalt solution is heated to a temperature sufficient to effect decomposition of the cobalt ammine carbonate in situ before separating the solid catalyst from the mixture and drying.
4. A process as claimed in any of claims 1 to 3, wherein the titania support and cobalt solution are maintained at an elevated temperature for a period of at least 60 minutes.
5. A process as claimed in any of claims 1 to 4, further comprising the step of calcining the resulting catalyst product at a temperature between 200 and 600°C.
6. A process as claimed in any of claims 1 to 5 further comprising the step of reducing the resulting catalyst product with hydrogen at a temperature between 300 to 550°C.
7. A process as claimed in claim 6, further comprising the step of dispersing the reduced catalyst in particulate form product in a carrier matrix.
8. A process as claimed in any one of claims 1 to 7, wherein the pH of the mixture of titania particles and aqueous cobalt ammine carbonate complex is maintained above 7.5 during the heating step.
9. A catalyst or catalyst precursor made by the process claimed in any of claims 1 to 8.

10. A process for the hydrogenation of an organic compound comprising an olefinic, carbonyl, nitrile, nitro or aromatic group, comprising reacting said compound with hydrogen in the presence of a catalyst as claimed in claim 9.
11. A process for the formation of a hydrocarbon by the reaction of carbon monoxide with hydrogen in the presence of a catalyst as claimed in claim 9.
12. A process as claimed in claim 11 or claim 12 further comprising the step of forming an active catalyst in situ by reducing a catalyst precursor as claimed in claim 9 with hydrogen before conducting said hydrogenation reaction.
13. A process for the oxidation of an organic compound by reaction with an oxygen-containing compound in the presence of a catalyst as claimed in claim 9.

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